

REMARKS

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

Specification

In the original specification, two sentences have been amended one on page 11, first paragraph and another on page 2 first paragraph.

The amendments for page 11 were made in conformance with the examiner's instructions on page 3 item 2 of the Office Action of February 05, 2007. In particular the text, "silver or silver allow within the" matrix was added.

The amendments for page 2 were to correct a typographical error for the measuring unit for the short circuit current.

Claims:

Claims 2, 5-7 and 9-10 are requested to be cancelled without prejudice or disclaimer for purposes of expediting allowance of the remaining claims. Applicant reserves the right to prosecute the claims corresponding to the cancelled claims and the subject matter thereof in further patent applications that may be filed based on the present application. Claims 1, 4 and 8 are currently being amended. After amending the claims as set forth above, claims 1, 3, 4 and 8 are pending in this application.

Claim 1 was objected to as failing to mention the use or capacity of a refrigerant. In response, claim 1 is amended to recite the cooled state of the first and second superconducting layers. Specifically claim 1, as amended, recites "said first and second superconducting layers are in a state cooled by a refrigerant." Therefore it is believed the objection as to claim 1 has been respectfully traversed.

Claim 1 was rejected under 35 U.S.C. 103 (a) as being unpatentable over Snowden (U.S. Patent No. 3,613,742; hereinafter Snowden). Claim 1 recites a superconducting cable that includes, among other features, a normal-conducting metal layer formed between said

electric insulating layer and said second superconducting layer. A superconducting cable having, features as recited in claim 1 is neither taught nor suggested, nor rendered predictable by Snowden.

As acknowledged by the Examiner, Snowden fails to show a normal conducting metal layer formed between the insulating layer and the 2nd superconducting layer. (Office Action paragraph 11). Instead, Snowden shows a normal conducting layer 72 outside of the superconducting layer, 68.

The Office Action of February 5, 2007 on page 5 and 6 asserts, that it would have been obvious to one having ordinary skill in the art at the time of the invention to exchange the position of the second superconducting layer with the normal conducting layer, because: (1) it has been held that a mere reversal of the essential working parts of the device involves only routine skill (In re Einstein, 8 USPQ 167 (Court of Customs an Patent Appeal 1931) and (2) the exchange of positions would reduce the electromagnetic interference between the superconducting layers. (Office Action, Paragraph 11). Applicants respectfully disagree.

1. No Obvious Rearrangement of Parts (Mere Reversal)

Page 5 of the Office Action asserts that to exchange the position of the second superconducting layer with the normal conducting layer would be obvious as a mere reversal of essential working parts. The claimed arrangement in claim 1 does not constitute mere obvious reversal, duplication, or rearrangement of parts under the standard of MPEP 2144.04 (VI) because it results in an unexpected result of a reduction of AC and Joule losses when compared to the references of record. In particular, this result is different from Snowden because it not only places its normal conductor outside the superconducting layer, but Snowden notes the benefits of doing so. (Column 4, lines 23 to 30). Specifically, Snowden recites that the placement of the normal-state conductive layer outside of the superconductor eliminates effects by the alternating current fields between the two conductors and no eddy current losses.

MPEP 2144.04(VI) states the following regarding reversal of parts:

A. Reversal of Parts

In re Gazda, 219 F.2d 449, 104 USPQ 400 (CCPA 1955) (Prior art disclosed a clock fixed to the stationary steering wheel column of an automobile while the gear for winding the clock moves with steering wheel; mere reversal of such movement, so the clock moves with wheel, was held to be an obvious expedient.).

In the present case, the claimed parts are not reversed from the part of the cited references. In other words, placing the normal-conducting metal layer between said electric insulating layer and said second superconducting layer does not involve a “reversal” of parts from placing the normal-conducting metal layer outside the superconducting layer.

MPEP 2144.04(IV) states the following regarding rearrangement of parts:

B. Rearrangement of Parts

In re Japikse, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950) (Claims to a hydraulic power press which read on the prior art except with regard to the position of the starting switch were held unpatentable because shifting the position of the starting switch would not have modified the operation of the device.); *In re Kuhle*, 526 F.2d 553, 188 USPQ 7 (CCPA 1975) (the particular placement of a contact in a conductivity measuring device was held to be an obvious matter of design choice). However, "The mere fact that a worker in the art could rearrange the parts of the reference device to meet the terms of the claims on appeal is not by itself sufficient to support a finding of obviousness. The prior art must provide a motivation or reason for the worker in the art, without the benefit of appellant's specification, to make the necessary changes in the reference device." *Ex parte Chicago Rawhide Mfg. Co.*, 223 USPQ 351, 353 (Bd. Pat. App. & Inter. 1984). (Emphasis added).

Thus, the rearrangement of parts rationale for obviousness requires some motivation in the cited references from the rearrangement to be found obvious. There is no such motivation in the cited references in the present case. The Snowden reference not only did not provide any motivation for a rearrangement, but instead it advocates having the layer 72

outside of the outer conductor 68. (Column 4, line 25-26). Snowden teaches that the reason for their arrangement is to eliminate alternating current fields between the two conductors and minimize eddy current losses.

2. Reduction of the Electromagnetic Interference is Not Obvious

According to the original specification on page 3, line 20 to page 4, line 14, the placement of the normal conducting layer is provided on the outer circumference of the superconducting layer have a drawback of the currents being prone to flow through the copper layer rather than the superconducting layer, thus resulting in increased AC losses and Joule losses. However Snowden on Column 4, lines 15 – 30, teaches that there would not be a reduction of electromagnetic interference with the arrangement as disclosed. Instead it teaches that in order to avoid alternating current fields between the two conductors the layers should be placed apart from each other. Snowden further teaches that there may be alternating current fields between the two conductors and there may be eddy current losses in such layers. (Snowden column 4, lines 25-30). Since Snowden teaches away from placing the normal conductive layer inside the superconductive layer, doing so would not be obvious to one of ordinary skill in the art.

Therefore, claim 1 would not be obvious to one of ordinary skill in the art and is believed to be allowable. Because claims 3, 4 and 8 directly depend from claim 1, they are believed to be allowable for at least the same reasons claim 1 is believed to be allowable.

Claims 2, 5, 6, 7 and 9 have been objected to because the subject matter needs to be clearly defined by a diagram. This objection is moot in view of the cancellation of claims 2, 5, 6, 7 and 9.

Conclusion:

Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 50-0872. Should no proper payment be enclosed herewith, as by a check or credit card payment form being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 50-0872. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 50-0872.

Respectfully submitted,

By

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